

Regularities of slope processes forming on the “kazan” ski complex area (russia)

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Abstract

© SGEM 2014. In the beginning of the 21 century, on the right bank of the Sviyaga river, the building up of the sport ski complex “Kazan” was organized and almost at once after that, an active landslides with considerable shifts of the soil began to happen. Previous researches were based on the conventional geology aspects of this area-sub horizontal deposits of Permian measures. Thus the critical angle and nature of the formed landslides are absolutely did not correspond to the typical destruction of rock massive of the area nearby. Our researches showed that on the area of sport ski complex, the geological aspect is absolutely different. Permian measures have an “invention” and considerably folded. It can testified to that we have a deal with an old landslide, forming of which had started in the period of late Neo-Pleistocene with the beginning of the depositing of the right flowing of Sviyaga river-Sulitsa river. In this work are presented the results of a comprehensive assessment of landslides danger on that area, which are based on a large volume of field and laboratory researches. As a result it was established that one of the reason of the landslides developing (not determinate during previous researches) is a strong dislocation and durability loss of carbonate and terrigene Permian measures. Therefore at calculation of stability of slopes it is necessary to consider possibility of formation of a circular cylindrical surface of sliding, by analogy to disperse soil. Mechanical properties of massive material have to be defined taking into account their fracturing. Also conducted researches led to revision of the earliest wrong ideas of a geological structure of this area and to make correction of geological maps.

Keywords

Deposits of Permian measures, Landslide, Mechanical Properties, Slope processes